WHAT IS CLAIMED IS:

1. An air pressure state reporting apparatus comprising:

an air pressure state detection device that is provided on a wheel and that detects a state of air pressure of a tire of the wheel; and

a reporting device that generates report information indicative of an air pressure state based on the state of air pressure detected by the air pressure state detection device, and that reports the report information generated to outside a vehicle.

2. The air pressure state reporting apparatus according to claim 1,

wherein the reporting device includes an report information generating portion that generates the report information, and an reporting portion that is operated in accordance with the report information generated by the report information generating portion, and

wherein the reporting portion includes at least one of a light radiation device that radiates light to outside the vehicle, a sound generating device that generates a sound to outside the vehicle, and a portable instrument that is separate from the vehicle.

3. The air pressure state reporting apparatus according to claim 1, wherein the reporting device includes an air pressure state information generating portion that generates different kinds of pieces of air pressure state report information in accordance with different states of air pressure detected by the air pressure state detection device, and an reporting portion capable of discriminatory reporting the different kinds of pieces of air pressure report information generated by the air pressure state information generating portion.

4. The air pressure state reporting apparatus according to claim 1, wherein the reporting device includes a vehicle-mounted device that is provided in the vehicle and is operated in accordance with operation of an operating member by a driver, and an air pressure state-corresponding vehicle-mounted device control portion that generates the report information and operates the vehicle-mounted device in accordance with the report information generated.

5. The air pressure state reporting apparatus according to claim 1, wherein the

reporting device includes a movable reporting device that has a movable member that is visually recognizable from outside the vehicle, a driving portion that operates the movable member, and a driving control portion that controls the driving portion.

6. The air pressure state reporting apparatus according to claim 1,

wherein the reporting device includes an air pressure supply state detection device that detects whether air pressure is being supplied to the tire, and

wherein the reporting device reports the report information while it is detected by the air pressure supply state detection device that air pressure is being supplied.

7. The air pressure state reporting apparatus according to claim 6, wherein the air pressure supply state detection device includes an increase gradient-corresponding air pressure supply state detecting portion that determines that air pressure is being supplied if a gradient of increase in the air pressure is greater than a set gradient.

8. The air pressure state reporting apparatus according to claim 6, wherein the reporting device includes an abnormality reporting portion that reports that a gradient of increase in the air pressure is at most an abnormality detection-purpose set gradient if the gradient of increase in the air pressure is at most the abnormality detection-purpose set gradient in a case where it is detected by the air pressure supply state detection device that air pressure is being supplied.

9. The air pressure state reporting apparatus according to claim 6, wherein the air pressure supply state detection device includes a during-stop air pressure supply state detecting portion that determines that air pressure is being supplied if a gradient of increase in the air pressure is greater than a set gradient in a case where a rotation speed of the wheel that includes the tire is at most a set speed.

10. The air pressure state reporting apparatus according to claim 6, wherein the reporting device includes an air pressure supply state reporting portion that generates air pressure supply state report information based on the state of air pressure detected by the air pressure state detection device and reports the air pressure supply state report information if it is detected by the air pressure supply state detection device that air pressure is being supplied.

11. The air pressure state reporting apparatus according to claim 1, further comprising a tire temperature-related information obtainment device that is provided on at least one of the wheel and the vehicle body and that obtains tire temperature-related information that is information related to a temperature of the tire, wherein the reporting device includes a standard state air pressure obtaining portion that obtains the air pressure of the tire in a standard state based on the tire temperature-related information obtained by the tire temperature-related information obtainment device and the state of air pressure detected by the air pressure state detection device, and a set pressure attainment information reporting portion that reports that the air pressure of the tire in the standard state obtained by the standard state air pressure obtaining portion is at least a set pressure if the air pressure of the tire in the standard state obtained by the standard state air pressure obtaining portion is at least the set pressure.

12. The air pressure state reporting apparatus according to claim 11, wherein the tire temperature-related information obtainment device includes a rotation state detection device that detects a state of rotation of the wheel, and the reporting device includes a rotation state-corresponding temperature estimating portion that estimates a temperature of the tire based on the state of rotation detected by the rotation state detection device.

13. The air pressure state reporting apparatus according to claim 11, wherein the standard state air pressure obtaining portion includes a high temperature-time obtaining portion that obtains the standard state air pressure if the tire temperature indicated by the tire temperature-related information obtained by the tire temperature-related information obtainment device is at least a set temperature.

14. The air pressure state reporting apparatus according to claim 1, wherein the reporting device includes an inside reporting portion that reports the report information to inside the vehicle during a normal condition, and an outside reporting portion that reports the report information to outside the vehicle if it is detected by the air pressure supply state detection device that air pressure is being supplied.

15. The air pressure state reporting apparatus according to claim 14, wherein if the standard state air pressure reaches a target value, the outside reporting portion reports so,

and if the standard state air pressure is lower than a reference value, the inside reporting portion reports so.

16. The air pressure state reporting apparatus according to claim 1, further comprising:

a wheel information transmitting portion that is provided on the wheel and that transmits wheel information that includes the state of air pressure detected by the air pressure state detection device; and

a receiving portion that is provided on the vehicle body and that receives the wheel information, wherein the reporting device includes a received information-based air pressure state obtaining portion that obtains the state of air pressure based on the wheel information received by the receiving portion.

17. The air pressure state reporting apparatus according to claim 1, wherein the reporting device is provided on the wheel.

18. The air pressure state reporting apparatus according to claim 1, wherein the reporting device includes a puncture repair state detection device that detects whether the tire is under a puncture repair.

19. An air pressure state reporting apparatus comprising:

an air pressure state detection device that is provided on a wheel and that detects a state of air pressure of a tire of the wheel;

an air pressure supply state detection device that detects whether air pressure is being supplied to the tire; and

an reporting device that generates report information indicative of an air pressure supply state based on the state of air pressure detected by the air pressure state detection device and reports the air pressure supply state report information generated, if it is detected by the air pressure supply state detection device that air pressure is being supplied.

20. An air pressure state reporting apparatus comprising:

an air pressure detection device that is provided on a wheel and that detects a value of air pressure of a tire of the wheel;

an air pressure supply state detection device that detects whether air pressure is being supplied to the tire;

an abnormality detection device that determines that there is an abnormality if a state where a gradient of change in the value of air pressure is at most a set gradient continues for at least a set time provided that it is detected by the air pressure supply state detection device that air pressure is being supplied; and

an abnormality reporting device that reports that there is an abnormality if the abnormality detection device detects so.

21. An air pressure state reporting apparatus comprising:

an air pressure detection device that is provided on a wheel and that detects a value of air pressure of a tire of the wheel; and

a standard state air pressure value obtaining portion that obtains a standard state air pressure value based on a detected air pressure value detected by the air pressure detection device and at least one of a load applied to the wheel and a temperature of the tire.

22. An air pressure reporting method comprising:

a first step of detecting a state of air pressure of a tire of a wheel; and

a second step of generating report information indicative of an air pressure state based on the state of air pressure detected, and reporting the report information generated to outside a vehicle.